KINETICS OF AIR-BLOWING OF SOME ROMANIAN PETROLEUM OIL RESIDUES

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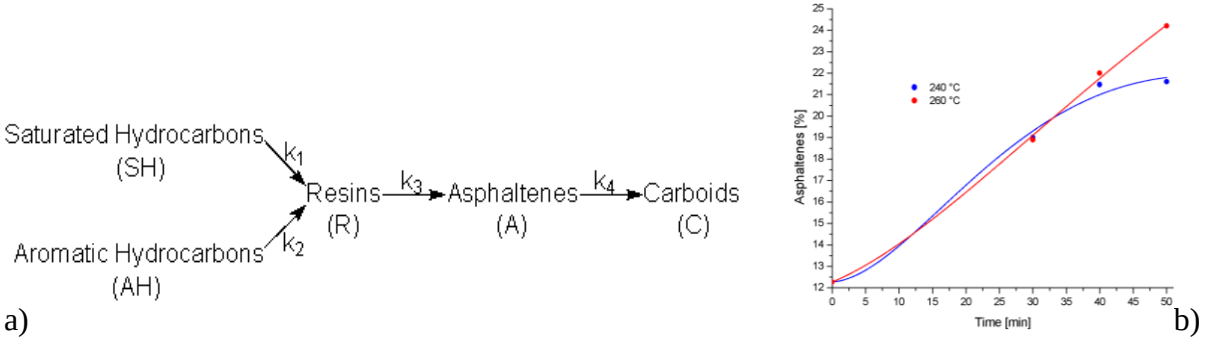
Abstract

Air blowing is the process by which compressed air is blown into a bitumen feedstock typically at 230–260°C. This process results in complex reactions which raise the softening point and viscosity of the asphalt bitumen [1].

Air blowing of bituminous materials was carried out in a static mixing gas-liquid reactor at 240° and 260 °C.

Chemical composition of feed material was: 30,08% saturated hydrocarbons; 30,26% aromatic hydrocarbons; 27,39% resins; 12,27% asphaltenes.

A reaction scheme and kinetics equations has been proposed to explain the time dependence of asphaltene contents during air blowing process.



a) b)

Chemical transformation during petroleum oil residues air oxidation process (a) and the time dependence of asphaltene contents (b)

References

[1] J.G. Speight, Asphalt Materials Science and Technology, Elsevier, 2016